

REMARKS

STATUS OF CLAIMS

Claims 1-26 are pending and stand rejected.

By this Amendment, claims 1-3, 7-11, 13-14 and 21-26 are amended. Therefore, claims 1-26 are now presented for consideration.

No new matter is presented by the claim amendments, accordingly, it is submitted that approval and entry of same are proper and are respectfully requested.

DRAWING STATUS ACKNOWLEDGMENT

No indication of the status of the drawings is provided in item 10 of the Office Action Summary. The Examiner is again requested to acknowledge the acceptability of the Drawings (Figs. 1, 2A-2B, and 3-10) in the next Office Action.

ITEMS 2-7: REJECTION OF CLAIMS 1-3, 6, 11-12 AND 21-26 UNDER 35 U.S.C. §102(e) AS BEING ANTICIPATED BY KANG.

In the Office Action at pages 2-4, items 2-7, claims 1-3, 6, 11-12 and 21-26 are rejected under 35 U.S.C. §102(e) as being anticipated by Kang. (U.S. Patent No. 6,400,347).

Applicants respectfully traverse the rejection and request reconsideration of claims 1-3, 6, 11-12 and 21-26.

The Examiner asserts, in the Office Action at page 2, lines 18-22, that Kang teaches a plasma display panel in which:

... [The] ... drive unit makes correction to change the intensity of the image signal of a predetermined color, so that the ratio of an emission intensity of said fluorescent substance of each color during white display is roughly the same when said display load factor is low and high, depending on a change of the display load factor, **column 3 lines 33-44, column 21 lines 10-20, column 22 lines 5-15.**

(Emphasis in original). The above citations to Kang in the above block quote do not support the rejection of the above noted claims.

In fact, the exact same columns and line citations -- but with reference to the Kasahara et al. reference -- were relied upon in the Office Action mailed March 26, 2003 (see page 2, item 3, lines 5-9 in the Office Action mailed March 26, 2003) in support of the rejection of claims 1-6, 11-12 and 21-26 as being anticipated by Kasahara et al. These are clearly in error. For example, the Kang reference does not include columns 21 and 22, and column 3, lines 33-44 of Kang do not suggest or disclose anything related to the subject matter of the rejected claims -- e.g., "display load factor" as in claim 1 does not appear in column 3, lines 33-44 of Kang. Accordingly, it is submitted that the Examiner has not provided a proper citation of portions of Kang supporting the rejection of the above noted claims.

Claim 1

Claim 1 is directed to a plasma display panel and recites: "[the] drive unit makes a correction to change an intensity of the image signal of a predetermined color, so that a ratio of an emission intensity of ... [a] fluorescent substance of each color during a white display is roughly the same when ... display load factor is low and high, depending on a change of the display load factor" (as recited in claim 1).

Kang Reference

Kang does not disclose or suggest the above-mentioned recitation in claim 1 because Kang at most discloses "measuring the brightness of each color signal and the color coordinates from at least more than one subfield," (see Kang at column 4 lines 43-46 and column 1, lines 55-58 in which brightness is disclosed as that of 256 grey levels); clearly, the Kang method does not perform any function related to "a correction to change an intensity of the image signal of a predetermined color ... depending on a change of the display load factor" for *color balancing* (e.g., so that a ratio of an emission intensity of a fluorescent substance of each color during a white display is roughly the same when said display load factor is low and high).

The present specification at page 2, line 27 to page 3, line 8, discloses that the display load factor:

depends on luminance (i.e., brightness) and/or display area of a display image, where (1) when 256 grayscales, which is the maximum grayscale, of white is displayed on the entire display screen, and the display load factor is 100%, (2) the display load factor decreases as the ratio of white to black in the display screen

decreases, and (3) the display load factor decreases as the grayscale value of white decreases even if the ratio of white to black is the same.

That is, a display load factor is dependent on changes, both in the luminance of the display image and also in the display area of the display image such that an increase in brightness will not necessitate an increase in display load factor, if the display area decreases. Accordingly, a brightness of each color signal cannot be substituted for a display load factor, since a result of such a substitution would produce different operating results.

Claim 2

Claim 2 is directed to a plasma display panel and recites "a drive unit which receives an image signal of ... different colors and drives the panel according to the image signal while decreasing a drive frequency of sustain discharges as a display load factor increases, wherein when the display load factor increases ... an intensity of the image signal of green is decreased or an intensity of the image signal of blue is increased compared with a case when the display load factor is lower." Thus, in the invention as recited in claim 2, the intensity of the image signal of green is decreased or the intensity of the image signal of blue is increased when the display load factor increases.

As previously mentioned, Kang does not disclose or suggest "a correction to change an intensity of the image signal of a predetermined color ... depending on a change of the display load factor" for *color balancing*. Thus, Kang does not disclose an increase or a decrease of intensity of the image signal of a particular color (i.e., green or blue, respectively,) when the display load factor increases (see claim 2).

Claim 11

Claim 11 is directed to a plasma display panel and recites "a detector to estimate a display load factor [and] ... a drive unit ... changing the drive frequency of sustain discharges according to the estimated display load factor, and changing an intensity of the image signal of a predetermined color so that a ratio of an emission intensity of each of the different colors ... is substantially equal regardless of the display load factor."

Kang does not disclose or even suggest the recitation in claim 11 of "a detector to estimate a display load factor" and, furthermore, the estimation of the display load factor thereby for *color balancing*. This is because Kang does not discuss anything related to changing the

drive frequency of sustain discharges according to the estimated display load for *color balancing*.

Accordingly, claims 1, 2 and 11 patentably distinguish over Kang and are allowable thereover.

Claim 3 is submitted to be allowable for reasons similar to those noted above for claim 2.

Claim 6, which depends from claim 3, is submitted to be allowable for the same reasons as claim 3, as well as for the additional recitations therein.

Claim 21 is submitted to be allowable for reasons similar to those noted above for claim 1.

Claims 22 and 23 are submitted to be allowable for reasons similar to those noted above for claim 21.

Claim 24 is submitted to be allowable for reasons similar to those noted above for claims 1 and 2.

Claims 25 and 26 are submitted to be allowable for reasons similar to those noted above for claims 2 and 3, respectively.

ITEMS 8 AND 9: REJECTION OF CLAIM 11 UNDER 35 U.S.C. §102(e) AS BEING ANTICIPATED BY YOU

In the Office Action at pages 4-5, items 8-9, claim 11 is rejected under 35 U.S.C. §102(e) as being anticipated by You (U.S. Patent No. 6,034,655).

Applicants respectfully traverse the rejection and request reconsideration.

You does not disclose or even suggest the above-mentioned recitation of claim 11, namely: "a detector to estimate a display load factor and a drive unit ... changing the drive frequency of sustain discharges according to the estimated display load factor, and changing an intensity of the image signal of a predetermined color so that a ratio of an emission intensity of each of the different colors ... is substantially equal regardless of the display load factor." In

particular, You is silent regarding both the detector and the estimation of the display load factor thereby for *color balancing*.

Accordingly, it is submitted that claim 11 patentably distinguishes over You and should be allowable thereover.

ITEMS 11-13: REJECTION OF CLAIMS 7-10, 13 AND 14 UNDER 35 U.S.C. §103(a)

In the Office Action at pages 5-7, items 11-13, claims 7-10, 13 and 14 are rejected under 35 U.S.C. §103(a) as unpatentable over Kang.

Applicants respectfully traverse the rejection and request reconsideration.

Claims 7-10

Claims 7-10 are directed to a plasma display panel and, respectively, recite “a chromaticity coordinate value during a white display is roughly constant regardless of a display load”; “a color temperature value during a white display is roughly constant regardless of a display load”; “a deviation from a color temperature curve denoted by a black body radiation curve during a white display is roughly constant regardless of a display load”; and “a chromaticity coordinate value during a white display is within $\pm 0.005uv$ of a deviation region from a color temperature curve denoted by a black body radiation curve regardless of a display load.”

Kang does not disclose or even suggest the respective above-mentioned recitations of claims 7-10. This is because, as previously mentioned, Kang is silent regarding *color balancing* depending on a display load and also is silent regarding “a chromaticity coordinate value”, “a color temperature value”, and “a deviation from a color temperature curve value.”

Accordingly, it is submitted that claims 7-10 are allowable over Kang.

Claims 13 and 14

Claims 13 and 14, which depend from claim 11, are submitted to be allowable for the same reasons as those of claim 11, as well as for the additional recitations therein.

ITEMS 14 AND 15: REJECTION OF CLAIMS 4, 5 and 15-20 UNDER 35 U.S.C. §103(a)

In the Office Action at pages 7 and 8, items 14 and 15, claims 4-5 and 15-20 are rejected under 35 U.S.C. §103(a) as being unpatentable over Kang in view of Nagai (2002/0044105).

Reconsideration of the rejection is respectfully requested.

Independent claims 3 and 11, from which claims 4-5 and 15-20 depend, are submitted to be allowable over Kang for the above noted reasons.

Nagai Reference

Nagai discloses that:

the APC [(i.e., automatic power control)] of the the plasma display is carried out by increasing/decreasing the number of sustain pulses per field according to the APL [(i.e., average picture level)] so that a constant maximum luminance (peak luminance) is reached for a low APL, and the luminance decreases as the APL increases ... This suppresses power consumption at a fixed level when the APL is high...

(Nagai at paragraph [0125]; inserts added.) Further, in the Nagai plasma display device (PDP):

the luminance efficiency of blue phosphors is relatively lower than that of other colors... To raise the color temperature of blue, the luminance of other colors (green and red) among the three primary colors of light must be lowered... [such that a] color temperature conversion is performed based on the input signal format... More specifically, a higher color temperature is set for the television signal, and a lower color temperature is set for the graphic signal.

(Nagai at paragraphs [0141] to [0142].)

This means that the Nagai PDP increases or decreases the number of sustain pulses per field according to the average picture level for all colors at the same time and that color temperature conversion (i.e., changing of color balance based on color temperature) is only based on the input signal format (i.e., the television signal or the graphic signal). Thus, Nagai does not disclose or suggest the recitation in claim 3 of "when the display load factor decreases ... [the] drive unit makes a correction so that an intensity of the image signal of green is increased or an intensity of the image signal of blue is decreased compared with a case when the display load factor is higher," because Nagai is silent regarding an intensity of the image signal of green being increased or an intensity of the image signal of blue being decreased when the display load factor decreases.

PRIMA FACIE OBVIOUSNESS OF THE COMBINATION OF KANG AND NAGAI HAS NOT BEEN SHOWN

Lack of Motivation to Combine the Teachings of Kang and Nagai

The Examiner states in the Action at page 8, line 3 that "Nagai advances on the invention taught by Kang."

However, the Examiner's statement is a conclusion and fails to identify any motivation from the record for combining the teachings of Kang and Nagai.

Accordingly, claim 3 is submitted to patentably distinguish over the cited art singularly or in any proper combination and should be allowable.

Since Nagai is silent regarding changing the drive frequency of sustain discharges according to the estimated display load for *color balancing* (e.g., changing an intensity of the image signal of a predetermined color so that a ratio of an emission intensity of each of the different colors during a white display is substantially equal), claim 11 is submitted to patentably distinguish over the cited art, taken singly or in any proper combination, and is submitted to be allowable.

Claims 4-5 and 15-20, which groupings respectively depend from claims 3 and 11, should also be allowable for the same reasons as those of claims 3 and 11, as well as for the additional recitations therein.

CLAIMS 1-6 AND 11-26 PATENTABLY DISTINGUISH OVER THE REFERENCE TO KOTA (JP 9-281927) SUBMITTED IN INFORMATION DISCLOSURE STATEMENT FILED HEREWITH

JP 9-281927-Kota was cited in an Office Action of the Japanese Patent Office recently issued in the Application Serial No. 11-186818, relied upon for Priority Benefit thereof. A translation of the Office Action is in preparation and will be available for filing herein during January 2004.

According to Kota, a PDP receives RGB image signals S1r, S1g and S1b, and corrects an intensity of an image signal so as to increase an intensity of a blue image signal when detecting a high APL (i.e., Average Picture Level). The correction in the Kota PDP is made by multipliers 7r, 7g and 7b. Further, difference circuits 9rg, 9gb and 9br, comparators 11rg, 11gb

and 11br and an AND gate 12 detect a white display region among the pixels in the panel. The corrected image signal is used only for the pixels in the detected white region, and a non-corrected image signal is used for the pixels in remaining region(s), other than the detected white region. Switching is performed by switching circuits 8r, 8g and 8b.

For example, when displaying an image of sky blue or light blue --the sky blue or light blue being generated by maximum levels of blue and green colors--, the PDP of Kota does not drive the pixels based on the corrected intensity of the image signal; as a result, an unbalanced color picture is produced by the Kota PDP due to the correction of only white pixels.

Thus, the Kota PDP, which corrects the intensity of the image signal only for the detected white region, does not correct the intensity of the image signal for region(s), other than the detected white region.

Claim 1

In the PDP according to the present invention as recited in claim 1, "a driver ... drives all of the pixels in the panel according to the corrected intensity of ... one image signal," regardless of the color each of the pixels is driven. Thus, a well-balanced picture is produced.

Accordingly, claim 1 patentably distinguishes over Kato and is submitted to be allowable thereover.

Claims 2-3, 11 and 21-26 include patentably distinguishing recitations similar to the above noted recitation in claim 1 and are also submitted to be allowable.

Claims 4-6 and 12-20 are submitted to patentably distinguish for at least their respective dependencies, as well as for the additional recitations therein.

CONCLUSION

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is respectfully solicited.

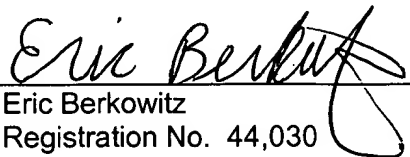
Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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